REMARKS

In response to the Office Action mailed March 11, 2004, Applicant respectfully requests reconsideration. To further the prosecution of this Application, Applicants submits the following remarks, and has added new claims. The claims as now presented are believed to be in allowable condition.

Claims 1-23 were pending in this Application. By this Amendment, claims 24-31 have been added. Accordingly, claims 1-31 are now pending in this Application. Claims 1, 6, 11, 12, 16, 20, 21, 22 and 23 are independent claims.

Allowed Claims

Claims 4, 5, 9, 10, 14, 15, 18 and 19 were objected to as being dependent on a rejected base claim but were deemed allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicant reserves the right to amend these claims as described above, but will refrain from making such amendments until Applicant receives a reply to Applicant's request for reconsideration of other claims.

Rejections under §101

Claims 1-5, 6-10 and 21-23 were rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. As the basis of the rejection, the Office Action contends that the claimed invention does not have any practical application (see paragraph 1 of the Office Action). Applicant respectfully traverses this rejection and requests reconsideration. The claimed invention does have practical application as will be explained below.

Before Applicants provide a discussion of the claims individually, Applicant wishes to point out that Applicant does not know of any Statute, Rule, Guideline or holding which imposes a requirement on claims that they expressly recite practical application as contended in the Office Action. If the rejection of the claims under 35 U.S.C. §101 is to be maintained, Applicant respectfully requests

that it be pointed out with particularity where the basis of this rejection lies, i.e., point out the particular Statute, Rule, Guideline or holding in case law.

Applicant does acknowledge that a Utility Requirement exists under 35 U.S.C. §101 and §112. However, the Office Action has not raised any argument that the claims lack utility, and Applicants respectfully submit that the invention, as recited in the claims, has clearly possesses utility, e.g., usefulness in the context of computer systems having color output devices as mentioned in the Specification, for example, on page 1, line 11 through page 2, line 15 and on page 9, line 18 through page 11, line 2. A detailed discussion of the individual claim sets will now be provided.

Claims 1-5

Claim 1 is directed to a method for matching a target color with a sample color. The method includes the step of generating a target identifier that identifies a target color in a device independent color space. The method further includes the step of providing a set of color space distances based on (i) the target identifier and (ii) a set of sample identifiers that identifies a set of sample colors in the device independent color space. Each sample identifier defines a sample color area having a core area and a buffer area adjacent the core area. The core area of the sample color area defined by each sample identifier includes a unique set of colors. The buffer area of the sample color area defined by each sample identifier is a same common color. The method further includes the step of selecting, from the set of sample identifiers, a particular sample identifier that identifies a particular sample color based on the set of color space distances, in order to match the target color with the particular sample color.

The Specification clearly explains that use of sample identifiers and color space distances (as recited in claim1) enables a color management system to create a color lookup table which stores matches between target colors identified by target identifiers and sample colors identified by the sample identifiers. A

description of this practical application is provided in the Specification, for example, on page 19, line 8 through page 21, line 16.

Additionally, once the color management system creates such a color lookup table, the color management system is capable of outputting a sample color which matches a target color by accessing the color lookup table. A description of this additional practical application is provided in the Specification, for example, on page 19, line 19 through page 22, line 20. Accordingly, the invention as recited in claim 1, and claims 2-5 which depend from claim 1, have practical application.

The Office Action, in paragraph 1, contends that a method for matching a target color with a sample color by selecting a particular sample identifier based on a set of color space distances is non-functional descriptive material and, as such, is mere data or different forms of non-functional description material. The Office Action then contends that descriptive material cannot exhibit any functional interrelationship with the way in which computing processes are performed (see paragraph 1 of the Office Action). Applicant respectfully disagrees with these contentions.

A method for matching a target color with a sample color is statutory subject matter as defined in 35 U.S.C. §101 which states that:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

A method for matching a target color with a sample color is clearly a process under 35 U.S.C. §101.

Additionally, claim 1 recites a step of selecting, from a set of sample identifiers, a particular sample identifier that identifies a particular sample color based on a set of color space distances. This is clearly not a recitation of mere data or different forms of non-functional description material as contended by the Office Action. Furthermore, this clearly does not preclude exhibiting a functional

interrelationship with the way in which computing processes are performed as contended by the Office Action. Rather, this is a step of a process (i.e., method) that results in matching of the target color with the particular sample color. Moreover, as mentioned above, this enables a color management system to create a color lookup table which, when the color lookup table is accessed, is well-suited for use in outputting a sample color which matches the target color. Also, such a method is clearly useful (i.e., possesses utility) for example in the context of computer systems having color output devices as mentioned in the Specification, for example, on page 1, line 11 through page 2, line 15 and on page 9, line 18 through page 11, line 2 and thus robustly complies with the Utility Requirements of 35 U.S.C. §101 and §112 (also see MPEP §2701). Accordingly, the rejection of claims 1-5 under 35 U.S.C. §101 should be withdrawn.

<u>Claims 6-10</u>

Claim 6 is directed to a system for matching a target color with a sample color. The system includes a generator module that generates a target identifier which identifies a target color in a device independent color space, and a distance module that provides a set of color space distances based on (i) the target identifier and (ii) a set of sample identifiers that identifies a set of sample colors in the device independent color space. Each sample identifier defines a sample color area having a core area and a buffer area adjacent the core area. The core area of the sample color area defined by each sample identifier includes a unique set of colors. The buffer area of the sample color area defined by each sample identifier is a same common color. The system further includes a selector module that selects, from the set of sample identifiers, a particular sample identifier that identifies a particular sample color based on the set of color space distances, in order to match the target color with the particular sample color.

As mentioned above in connection with claim 1, there is clearly practical application for a process (or method) for matching a target color with a sample color along these lines. Accordingly, there is also clearly practical application for a system that performs a similar process for at least the same reasons. Thus, the invention as recited in claim 6 and claims 7-10, which depend from claim 6, have practical application and the rejection of claims 6-10 under 35 U.S.C. §101 should be withdrawn.

Claims 21-23

Independent claim 21 is directed to a method for ranking a set of sample colors relative to a target color. Independent claim 22 is directed to a system for ranking a set of sample colors relative to a target color. Independent claim 23 is directed to a computer readable medium having instructions stored thereon for ranking a set of sample colors relative to a target color. Such ranking involves generating a target identifier that identifies a target color in a device independent color space, and providing a set of color space distances based on the target identifier and a set of sample identifiers that identifies a set of sample colors in the device independent color space. Each sample identifier defines a sample color area having a core area and a buffer area adjacent the core area. The core area of the sample color area defined by each sample identifier includes a unique set of colors. The buffer area of the sample color area defined by each sample identifier is a same common color. Such ranking further involves, based on the set of color space distances, ordering sample identifiers of the set of sample identifiers in order to rank the sample colors identified by the sample identifiers relative to the target color.

The Specification clearly explains that ranking a set of sample colors relative to a target color (as recited in claims 21-23) is useful to confirm proper color matching by a color management system. A description of this practical application is provided in the Specification, for example, on page 22, lines 23-27. Similar arguments are submitted above in connection with Applicant's traversal of

the rejection of claims 1-10 under 35 U.S.C. §101. Accordingly, there is clearly practical application for such ranking for similar reasons. Therefore, the invention as recited in claims 21-23 has practical application and the rejection of claims 21-23 under 35 U.S.C. §101 should be withdrawn.

Rejections under §103

Claims 1-3, 6-8, 11-13, 16-17 and 20-23 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,065,234 (Hung et al.). Applicant respectfully traverses this rejection and requests reconsideration. These claims are in allowable condition.

Hung discloses a method for correcting a color image and a color masking apparatus 1 (column 8, lines 29-35 and Fig. 27). Color levels are supplied to a color printer to form color patches with these color levels on a recording medium (to be referred to as printed paper) (column 9, lines 30-34). Actual colors are measured based on the resultant color patches, and the measure values are converted into sample values in the color system (column 9, lines 35-37). The number of color patches is preferably large and actual color measurement requires a long time when the number of color patches is increased (column 9, lines 38-43). In order to increase the apparent number of color patches, the actual number of color patches can be increased by arithmetic operations where colors of points falling outside the color patches are approximated using a curve obtained by using three or more known color patches, i.e., through interpolation (column 9, lines 44-58). Hung further discloses that Y, M and C color components have 256 levels from level 0 to level 255 (column 10, lines 63-64). In this case, five levels are selected for each of the Y, M and C color components, and color patches are created on the basis of all color combinations (5x5x5=125) (column 10, line 64 through column 11, line 1 and Fig. 14). The number of color patches is increased by interpolation (column 11, lines 4-5).

<u>Claims 1-3</u>

Claim 1 is directed to a method for matching a target color with a sample color. The method includes the step of generating a target identifier that identifies a target color in a device independent color space. The method further includes the step of providing a set of color space distances based on (i) the target identifier and (ii) a set of sample identifiers that identifies a set of sample colors in the device independent color space. Each sample identifier defines a sample color area having a core area and a buffer area adjacent the core area. The core area of the sample color area defined by each sample identifier includes a unique set of colors. The buffer area of the sample color area defined by each sample identifier is a same common color. The method further includes the step of selecting, from the set of sample identifiers, a particular sample identifier that identifies a particular sample color based on the set of color space distances, in order to match the target color with the particular sample color.

<u>Hung</u> does not teach or suggest a method for matching a target color with a sample color which includes a step of:

> providing a set of color space distances based on (i) the target identifier and (ii) a set of sample identifiers that identifies a set of sample colors in the device independent color space, wherein each sample identifier defines a sample color area having a core area and a buffer area adjacent the core area, wherein the core area of the sample color area defined by each sample identifier includes a unique set of colors, and wherein the buffer area of the sample color area defined by each sample identifier is a same common color,

as recited in claim 1. Moreover, Applicant cannot find any teaching or suggestion of any sample identifier defining a sample color area having a core area including a unique set of colors and a buffer area adjacent the core area which is a same common color, as recited in claim 1. Rather, <u>Hung</u> discloses a method for correcting a color image and a color masking apparatus 1 where Y, M and C color components have 256 levels from level 0 to level 255 (e.g., see column 10,

lines 63-64 of Hung). In particular, five levels are selected for each of the Y, M and C color components, and color patches are created on the basis of all color combinations (5x5x5=125) (see column 10, line 64 through column 11, line 1 and Fig. 14 of Hung).

Additionally, in the rejection of claim 1 under 35 U.S.C. §103(a), the Office Action states that "Hung fails to teach that each sample identifiers defines a sample color area having a core area including a unique set of colors and a buffer area adjacent the core area having a same common color [sic]" (see page 3, paragraph 2 of the Office Action). Applicant agrees with this statement.

However, the Office Action then contends that it would have been obvious "to consider the areas in the sample identifiers in Hung includes a core area and a buffer area adjacent the core area since they are different color patch patterns created on the basis of all color combinations having different color values and common color values wherein each color patch pattern is preferably an independent color space (col. 9, lines 1-4; col. 10, line 67- col. 11, line 3) [sic]" (see page 3, paragraph 2 of the Office Action). Applicant respectfully disagrees with this contention. As mentioned earlier, Hung discloses color patches having different levels for color components Y, M and C. In the case of 5 different levels for color components Y, M and C, there are 125 different possible color patches which are illustrated in 5 5x5 charts shown in Figs. 14A through 14E of Hung. It is Applicant's understanding that the 5x5 charts of Hung are not actual areas (i.e., 2-dimensional regions) on a medium such as a piece of paper. Rather, the 5x5 charts of Hung show 25 different possible color patches for particular levels of Y. On the other hand, claim 1 clearly recites that "each sample identifier defines a sample color area having a core area and a buffer area adjacent the core area". Accordingly, the contention made by the Office Action is incorrect because Hung does not teach or suggest a sample identifier which includes a core and a buffer area adjacent the core area.

Furthermore, Hung deals with interpolation, i.e., increasing the number of different color patches by arithmetic operations where colors of points falling

outside known color patches are approximated using a curve obtained by using three or more known color patches (e.g., see column 9, lines 44-58 of <u>Hung</u>) not with areas (i.e., 2-dimensional regions). Accordingly, it is unclear how one could modify the Hung system to provide a sample identifier having which includes a core and a buffer area adjacent the core area, as recited in claim 1.

In order to establish a *prima facie* case of obviousness, the Office Action must meet three criteria.

> "First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."[1]

Clearly, there is no teaching or suggestion of all the claim limitations (e.g., a core and a buffer area adjacent the core area, as recited in claim 1).

For the reasons stated above, claim 1 patentably distinguishes over the cited prior art, and the rejection of claim 1 under 35 U.S.C. §103(a) should be withdrawn. Accordingly, claim 1 is in allowable condition.

Because claims 2-3 depend from and further limit claim 1, claims 2-3 are in allowable condition for at least the same reasons.

<u>Claims 6-8</u>

Claim 6 is directed to a system for matching a target color with a sample color. The system includes a generator module that generates a target identifier which identifies a target color in a device independent color space, and a distance module that provides a set of color space distances based on (i) the target identifier and (ii) a set of sample identifiers that identifies a set of sample colors in the device independent color space. Each sample identifier defines a sample color area having a core area and a buffer area adjacent the core area.

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[1]   *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The core area of the sample color area defined by each sample identifier includes a unique set of colors. The buffer area of the sample color area defined by each sample identifier is a same common color. The system further includes a selector module that selects, from the set of sample identifiers, a particular sample identifier that identifies a particular sample color based on the set of color space distances, in order to match the target color with the particular sample color.

As mentioned above in connection with claim 1, Hung does not teach or suggest a system which uses a sample identifier having a core and a buffer area adjacent the core area, as recited in claim 6. Accordingly, claim 6 patentably distinguishes over Hung for at least the same reasons as claim 1. Therefore, the rejection of claim 6 under under 35 U.S.C. §103(a) should be withdrawn, and claim 6 is in allowable condition.

Because claims 7-8 depend from and further limit claim 6, claims 7-8 are in allowable condition for at least the same reasons.

Claim 11

Claim 11 is directed to a computer readable medium having instructions stored thereon for matching a target color with a sample color, such that the instructions, when carried out by a processor, cause the processor to perform steps. These steps are similar to that of the method recited in claim 1 in that at least one step involves the use of a sample identifier having a core and a buffer area adjacent the core area, as recited in claim 1.

As mentioned above in connection with claim 1, Hung does not teach or suggest use of a sample identifier having a core and a buffer area adjacent the core area, as recited in claim 11. Accordingly, claim 11 patentably distinguishes over Hung for at least the same reasons as claim 1. Thus, the rejection of claim 11 under under 35 U.S.C. §103(a) should be withdrawn, and claim 11 is in allowable condition.

Claims 12-13, 16-17 and 20-23

Claims 12-13, 16-17 and 20-23 recite involvement of a sample identifier having a core and a buffer area adjacent the core area, as recited in claim 1. However, as mentioned above in connection with claim 1, Hung does not teach or suggest use of a sample identifier having a core and a buffer area adjacent the core area. Accordingly, claims 12-13, 16-17 and 20-23 patentably distinguish over Hung for at least the same reasons as claim 1. As a result, the rejection of claims 12-13, 16-17 and 20-23 under 35 U.S.C. §103(a) should be withdrawn, and claims 12-13, 16-17 and 20-23 are in allowable condition.

Newly Added Claims

Claims 24-31 have been added and are believed to be in allowable condition. Claim 24 depends from claim 1. Claim 25 depends from claim 6. Claims 26-27 depend from claim 11. Claim 28 depends from claim 12. Claim 29 depends from claim 16. Claims 30-31 depend from claim 20. Support for claims 24-31 is provided within the Specification, for example, on page 10, line 11 through page 14, line 8. No new matter has been added.
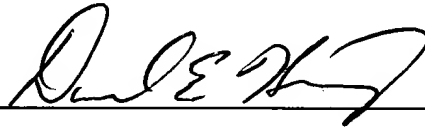
Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Amendment, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicant's Representative at the number below.

Applicants hereby petitions for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this Amendment, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,

David E. Huang, Esq.
Attorney for Applicant
Registration No.: 39,229
CHAPIN & HUANG, L.L.C.
Westborough Office Park
1700 West Park Drive
Westborough, Massachusetts 01581
Telephone: (508) 366-9600
Facsimile: (508) 616-9805

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